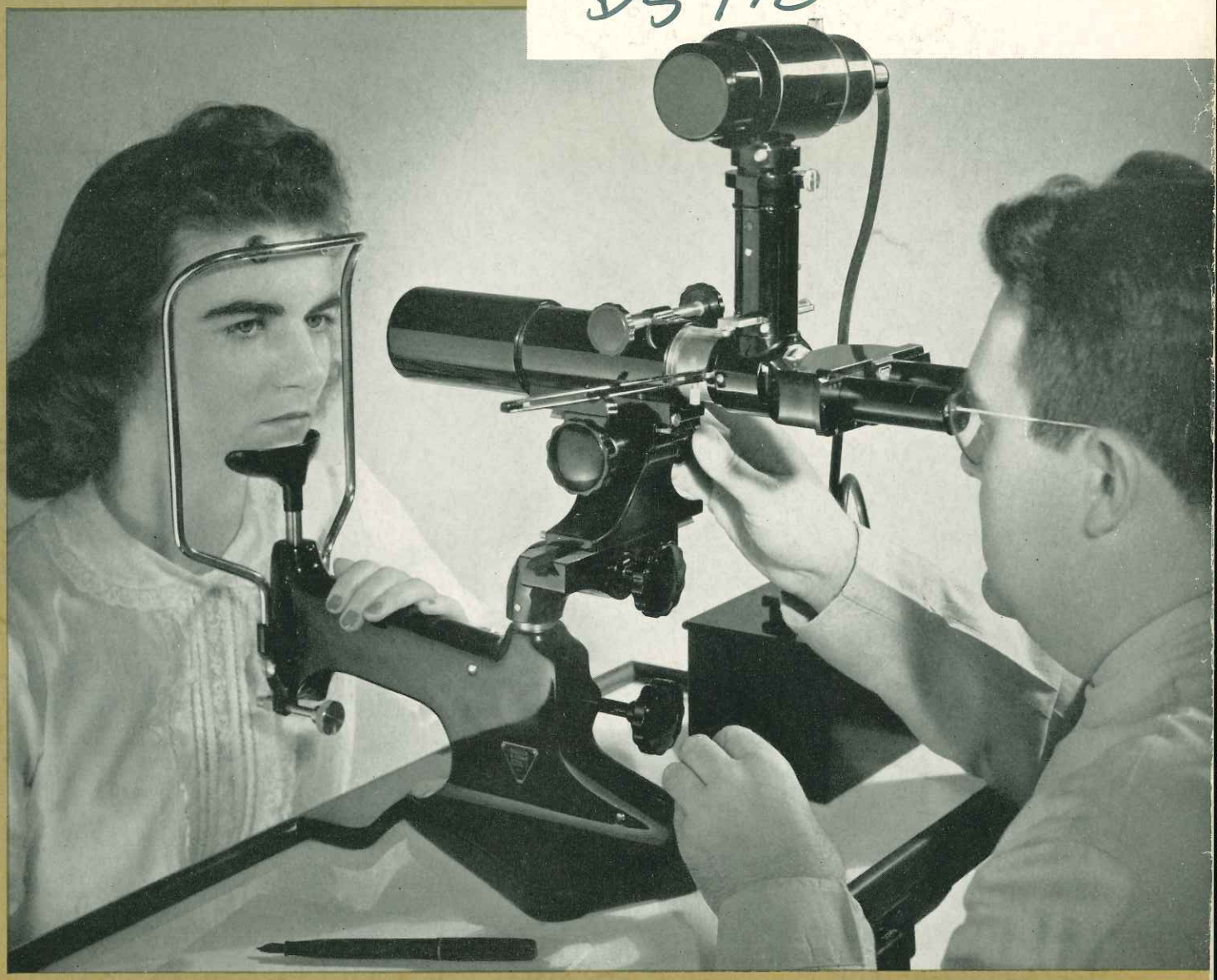
BAUSCH & LOMB

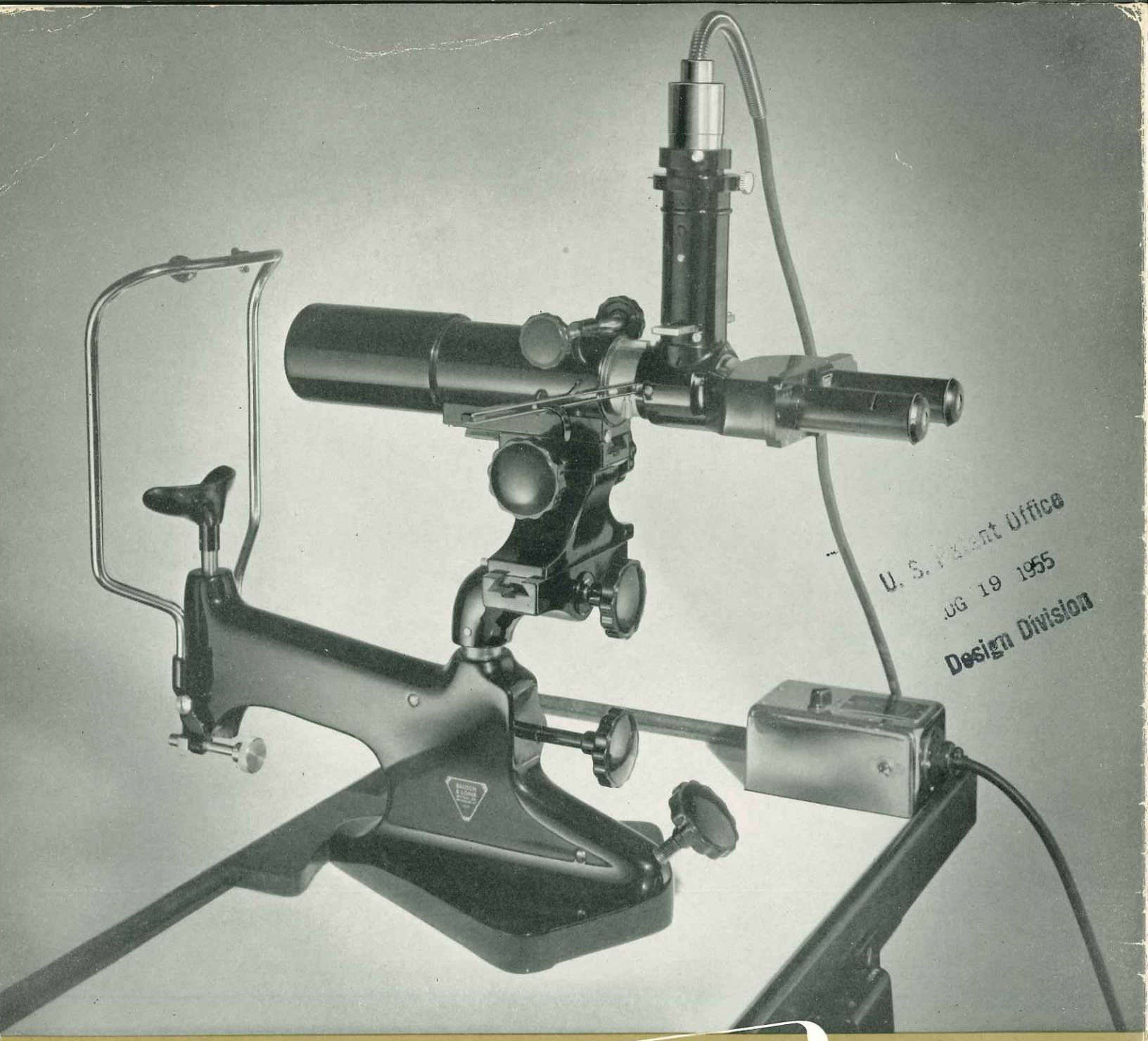
U.S. Patent Office
AUG 19 1955
Design Division

Binocular Ophthalmoscope

D571E



...*with* Hildreth Mercury Lamp Attachment

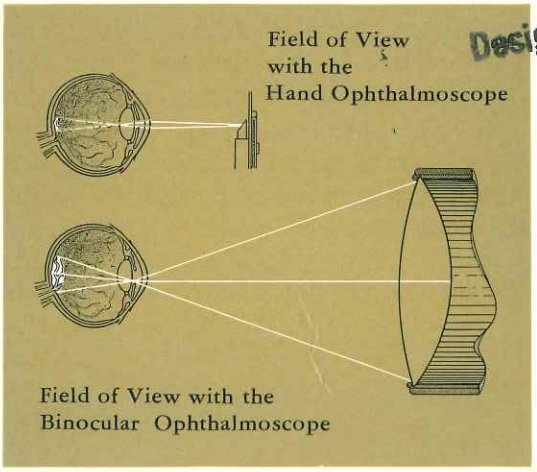


U. S. Patent Office
AUG 19 1955
Design Division

Binocular Ophthalmoscope

It is impossible to portray in words the ease of manipulation or quality of picture obtained with the Binocular Ophthalmoscope. Only through an experience in handling the instrument, which is easily adaptable to the Hydraulic Instrument Stand, and actually seeing eye grounds in third dimension, can the true worth of the instrument in everyday practice be demonstrated. Ask your B & L Distributor for further details.

U. S. Patent Office
AUG 19 1955
Design Division



CRITICAL and thorough retinal examination requires a stereoscopic perception of depth and high magnification for which the Binocular Ophthalmoscope is designed. And now, with the Hildreth Mercury Lamp Attachment, fundus detail is enhanced through the use of monochromatic light.

LARGE STEREOSCOPIC VIEW

With the Binocular Ophthalmoscope, an erect, stereoscopic view of the fundus is seen magnified sixteen times. True stereoscopic vision is produced over a field four times as large as that seen with a hand instrument. Simultaneous view of the optic disc and the macular region is therefore possible. This binocular view in third dimension may be obtained with pupils as small as 3mm.

For the important differential diagnosis between such pathology as papillitis and choked disc, for the differentiation between the physiologic and pathologic cupping of the disc, or a true picture of any retinal lesions, a stereoscopic view shows the exact surface topography. One of the prime features of the Binocular Ophthalmoscope is the ease and speed with which it can be used. All control knobs are conveniently placed for the operator.

EASY MANIPULATION

The light is focused on the patient's iris, then the instrument is elevated to throw the beam just over the lower edge of the pupil into the eye. The picture is seen immediately. A fixation device, attached to the instrument, directs the patient's line of sight to facilitate exploration of the fundus.

The Binocular Ophthalmoscope, by its very nature, enables the operator to demonstrate what he has observed to a consultant or to a patient's relatives.

CONTROL OF IMAGE SIZE

The large field of view possible with the Gullstrand instrument is retained in the B&L Binocular Ophthalmoscope. For controlling the size of field viewed and therefore the volume of light entering the eye, an iris diaphragm is incorporated in the illumination system. The diaphragm permits fields from one the size of the optic disc to one which includes both the optic disc and the macula.

CONTROL OF ILLUMINATION

The source of illumination in the standard Binocular Ophthalmoscope is a coiled wire, straight line filament automobile bulb operated on 115 volts A.C. or D.C. through a variable resistance.

By means of the variable resistance and a neutral filter, the intensity of illumination can be controlled over a wide range. Views of the fundus are obtained with low values of light intensity in clear media, and higher intensities permit a picture through cloudy media.

RED-FREE FILTER

Occasionally it is advantageous to use a red-free source of illumination for examination of small vessels and minute hemorrhagic areas.

Red-free light is obtained with the standard Binocular Ophthalmoscope by simply shifting the neutral filter slide to interpose the red-free filter in the light path.

AUXILIARY LENSES

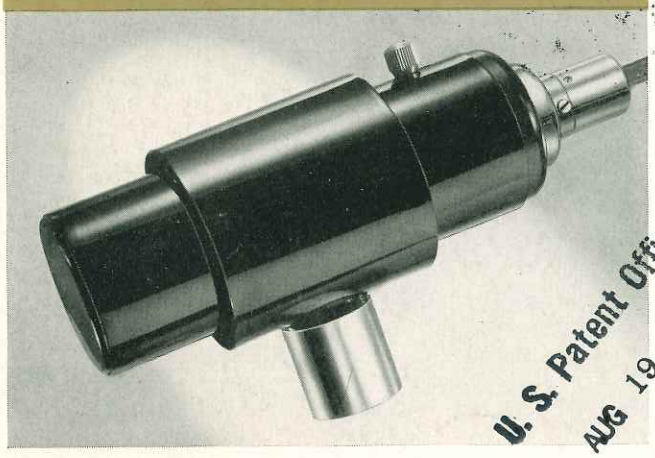
When patient refractive errors falling between plus 5.00 D and minus 5.00 D are involved, a clear image is obtained quickly by focusing the telescope. For errors greater than these, auxiliary lens slides are supplied, as part of the equipment, to compensate up to plus 20.00 D or minus 20.00 D. With these lens slides and the focusing arrangement, clear images are assured in all cases.

GRATICULE EYEPIECE

This accessory is interchangeable with either regular eyepiece. A 1° scale is projected on the retina so that the calibre of vessels, retinal lesions, hemorrhages, and tears may be measured.

HILDRETH

Mercury Lamp Attachment



U. S. Patent Office
AUG 19 1955
Design Division

IT IS NOW POSSIBLE, with the addition of the Hildreth Mercury Lamp Attachment for the Binocular Ophthalmoscope, to greatly enhance the sharpness of fundus detail. This monochromatic light source has high intrinsic brilliance, yet is not objectionable to the patient, as it is entirely red-free.

Small retinal changes, particularly foveal, are much more visible, since chromatic aberrations of both the patient's and examiner's eyes are materially minimized. For studying the minute ocular vessels, opacities, and hemorrhages, the Hildreth Mercury Lamp is an important improvement over ordinary illumination.

MONOCHROMATIC LIGHT

This feature of the Binocular Ophthalmoscope has been made possible by the recent development of a small Mercury Lamp. This type of light has several advantages. It is entirely red-free, hence it is unnecessary to use a red-free filter which has the disadvantage of reducing the illumination. By far the major portion of light from the Mercury Lamp consists of three pure colors—yellow, green, and blue. Since these colors are pure, that is, consist of a very narrow wavelength and are well separated in wavelength from one another, it is possible to use filters to obtain high intensity light of a single pure color. The fundus details become sharpened when viewed under mercury illumination and have a distinct advantage over ordinary illumination for careful study of fundus structure and in distinguishing certain conditions.

In the diagnosis of toxic amblyopia, for example, there may be a question of partial optic nerve atrophy. From visual field studies and ordinary ophthalmoscopy it is impossible to determine the condition of the nerve fibers in the retina. When the retina is examined with the mercury illumination, the normal nerve fibers are visible, but in atrophy they are invisible and diagnosis can thus be accurately made.

Capillary invasion can be seen with this light that cannot be seen with white light, which may aid in the early diagnosis of carcoma of the choroid.

MACULA LUTEA EXAMINATION

The macula lutea truly becomes the yellow spot. Senile macular degeneration, hole in the macula, and all macular changes stand out vividly in monochromatic yellow light. Probably mercury illumination's greatest usefulness lies in the study of the macula. This most important spot becomes a distinctive three dimensional structure newly appreciated when viewed through the Binocular Ophthalmoscope with mercury illumination.

FILTERS

A filter slide is supplied as regular equipment with the Hildreth Mercury Lamp. This slide contains two filters . . . one filters out pure yellow, the other pure green light.

Catalog No.	Description	
71-63-40-21	Binocular Ophthalmoscope, with fixation device, red-free and neutral filter, 2 auxiliary lens slides, adjustable resistance for D.C., and cover	
71-63-40-02	Same as 71-63-40-21 but with transformer for A.C.	
31-31-32	Bulb, No. 88, 6-8 volts, 15 C.P., double contact bayonet base ..... net	
71-63-21-13	Graticule Eyepiece	
71-63-44-46	Hildreth Mercury Lamp with Filter Slide. Transformer for A.C. only	
71-71-66	Mercury Vapor Lamp ..... net	
71-91-75	Transparent cover	

BAUSCH & LOMB

OPTICAL COMPANY ROCHESTER 2, N.Y.

H557, 15, VII-49

Printed in U. S. A.